# FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-8060 B&G Farms – Mint Still

#### **SUMMARY**

B&G Farms, Inc. owns and operates a mint still facility in western Grant Co. approximately ten miles northwest of Royal City. Diesel fired boilers produce steam which is used in the distillation process to extract the mint oil from the mint plant. The still operates approximately 80 days per year. Hot (130-160 °F) condenser water is the primary component of the process wastewater stream from the distillation process.

Treatment of the mint still water consists of a series of evaporative/cooling ponds and then irrigation onto land for final treatment. The ponds were designed to reduce the temperature of the wastewater to  $\leq$  85 °F prior to land application. The total nitrogen concentration of the irrigated wastewater is less than 5 mg/L which has resulted in low loading rates. The total dissolved solids of the wastewater is also low; 150 mg/L. A large portion of the wastewater from the still is mixed with fresh water and reused in the distillation process, which reduces the amount of wastewater irrigated on a daily basis.

The sampling and reporting conditions in the proposed permit will remain essentially unchanged from the previous permit. The Permittee will be required to install a spill containment structure at the above ground diesel storage tank site and submit a spill plan.

B&G will also be required to install a flow measuring device for the condenser water discharge stream from the still.

The permit reduces the hydraulic load limit for the rill irrigated field from 3 to 2 ft/year in an effort to reduce the high level of leaching from this field. Irrigation sets for the rill field will be limited to 12 hours instead of 24 hrs. Continued high leaching from the rill irrigated fields could result in its removal from the land treatment sprayfield system.

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#### INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. **ST-8060**The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the state include procedures for issuing permits (Chapter 173-216 WAC), and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments.

GENERAL INFORMATION						
Applicant	B&G Farms					
Address	12088 Road 11 S.W., Royal City, WA 99357					
Type of Facility	Mint still					
Type of Treatment:	Cooling pond and land treatment					
Discharge Location	At the NW corner of the intersection of Adams Rd. and Road 11 S.W. (Grant Co) Latitude: 46° 55' 45" N Longitude: 119° 45' 07" W.					
Legal Description of Application Area	Approx 700 acres located within U.S. Bureau of Reclamation Irrigation Block 82. Section 25, 30, 31, and 36, T. 17N., R 24 EWM					
Contact at Facility	Name: Ms. Farrah Brown Telephone: 509.346.2294					
Responsible Official Name: Mr. Mike Brown Title: Owner FAX: 509.346.2296						

#### **BACKGROUND INFORMATION**

#### DESCRIPTION OF THE FACILITY

Brown and Guis Farms (B&G Farms) owns and operates a permanently sited mint still facility located approximately 10 miles west of Royal City in Grant Co. Washington (Fig. 1). The site is within the federal Columbia Basin Irrigation Project that is managed by the U.S. Bureau of Reclamation, and operated by different irrigation districts. Irrigation water is supplied to land owners via an extensive network of canals, laterals, and ditches from approximately March to October.

Gently rolling irrigated agricultural land surrounds the entire mint still site. Precipitation data for the area shows a yearly average of approximately 8 inches, and a 1-in-10 year event of 10.9 inches. Temperatures generally exceed 50 °F from April through October.

Mint is harvested and processed twice during the year; an early harvest in July (2 ½ weeks), and late August to early October. The mint still facility operates daily for 10-15 hrs during the harvest season.

#### INDUSTRIAL PROCESSES

Mint oil is extracted from the harvested mint plant using a distillation process (Fig. 2 and 3). After the mint is cut and field chopped, it is put into an enclosed trailer (tub) and brought to the still facility. A steam line is attached to the tub and the mint is cooked. After approximately 45 minutes, the steam/mint oil vapor begins to vent from the tub and enters into a water cooled condenser. The condensed hot oil/water mixture flows to an oil/water separator where the mint oil is skimmed from the top into a container. The hot water from the separator is then redistilled to recover residual oil.

The non-contact condenser water is either reused in the boiler to produce steam, or is discharged. The temperature of the discharged condenser water ranges between 130-160 °F. The temperature of the redistill condenser water has a temperature of 140-160 °F, while the temperature of the redistilled water can have a temperature of 165-200 °F.

The B&G mint still has 25 condensers and five redistill units. Information presented in the facility's engineering report (Bain, 1998) estimated that at full operation, the discharge from the facility could be 5.8 cfs (3.75 MGD). However, under "normal" operations the daily operation of the still should produce a discharge flow of approximately 1.63 MGD. The majority of the flow from the facility (95%) is from the 25 condenser system.

Fresh water that is used in the four diesel fired boilers to produce the steam and used in the condensers is obtained by diverting water from a nearby irrigation supply ditch to the on-site pond system (Fig. 4). The fresh water first enters Pond #2, then to Pond #3 where it is mixed with cooled discharge water from the primary cooling pond. Water from Pond #3 is pumped to the still or to the land treatment system for irrigation.

Information contained in the permit application shows that approximately 91,000 yd<sup>3</sup> of mint is harvested that produces approximately 500,000 lbs of mint oil.

#### Wastewater

Table 1 and Table 2 in Addendum 1 to this Fact Sheet present flow and chemical data for the condenser and redistill water waste streams as reported to Ecology by the Permittee for the period February 2001 – November 2004. Average and maximum condenser water discharge flow values steadily declined over the reporting period. The average values for the reporting period are well below the estimated design flow for the still (1.63 mgd; Bain, 1998). The single nitrate and TKN concentration values for the condenser water (0.04 and 0.88 mg/L, respectively) are similar to what was estimated in the engineering report.

The chemical characteristics of the redistill water show a much higher concentration of TKN (13.5 - 31.4 mg/L) than for the condenser water. Most of the TKN is comprised of ammonia nitrogen. The higher TKN values in the redistill wastewater are similar to what was reported in the engineering report, and are most likely due to its contact with the mint oil and the presence of some residual oil.

#### TREATMENT PROCESSES

A series of evaporative ponds is used to cool the condenser and redistill water prior to reuse in the still or spray irrigated for treatment. Cooling water from the condenser system is sent to pond #1, then to a cooling channel, and finally to the primary cooling pond (Fig. 4). Unlike the condenser water, the redistilled wastewater is discharged directly to the primary pond.

Water from the primary cooling pond discharges into pond #3 where it is mixed with fresh water. This mixture is either pumped to the still or to the irrigation fields. According to a site visit in 2005, every effort is made to reuse the water from the primary cooling pond. Therefore, because the cooled process wastewater is mixed with the fresh water and used in the still, the amount of wastewater that is irrigated is less than that discharged on a daily basis.

To help the cooling process, a continuous large diameter (12") steel pipe has been installed along the entire length of the top of the containment wall of the primary cooling pond with spray nozzles along the entire length. Water from the cooling channel is pumped through the pipe and nozzles that produces a fountain effect to help cool the water.

#### **Ponds**

The earthen built Pond #1, #2, and #3 were in-place when the mint still facility was first permitted in 1999. They provided storage for the fresh water to be used in the still. Prior to 1999 process wastewater from the still was discharging to a road side ditch along Road 11 S.W. (Fig. 4) that flowed westerly into Sand Hollow Creek. This creek flowed several miles and discharged into the Columbia River.

The primary cooling pond (approximately 2.4 acres) and cooling channel were constructed in 1998 to remove the discharge of the condenser and redistill waste streams from Sand Hollow Creek, and to allow cooling prior to land treatment irrigation. The primary pond was designed, in part, to store all of the process water produced from the still during "normal operations" (daily flow of 1.63 mgd) and provide cooling to an irrigated temperature of  $\leq$  85 °F to protect the crop. The primary cooling pond/channel was excavated from a large area that was formerly used to stock pile the cooked mint material (a/k/a mint slug) prior to land disposal.

Ecology approved the pond construction with a 12" clay liner. Not requiring a synthetic liner as is usual for wastewater storage ponds was based on the short mint process season (approximately 80 days) and corresponding short storage time, the relatively deep nature of the local ground water as described in the engineering report, and the low nitrogen and TDS content of the wastewater.

#### SPRAYFIELD SYSTEM

Nine sprayfields totaling approximately 700 acres are available for use; Fig. 5. However, only three fields have been used; field 20A (33 ac) and 20B (35 ac), and Baird field (115 ac). None of the other fields are currently plumbed to accept wastewater. The 20A and 20B fields are irrigated via center pivot, and the Baird field is a rill irrigated field.

The irrigation pump for the 20A and B fields is located at Pond #3. Both fields are irrigated simultaneously when the pump is on. Water from Pond #3 is supplied to the Baird field via a hand line and PTO pump.

Information presented in the irrigation and crop plan report for the 2002 season (Soiltest Farm Consultants, 2003) showed that 4.62 ac-ft (1.51 MG) of process wastewater was applied to the fields. This accounted for approximately 1% of the total crop requirement of 448 ac-ft. Both center pivot fields showed low (8%) leaching fractions while the amount leached from the rill irrigated field was extremely high (52%).

The low nitrogen concentration of the irrigated wastewater (Addendum 1) resulted in nitrogen loading to all fields being less than 1 lb/acre. Supplemental fertilizer was added to all fields.

The maximum temperature values of the irrigated wastewater have been below the design value of 85 °F.

#### GROUND WATER

There has been no definitive description of the ground water at the site. A general description of the soils, geology, and ground water beneath the site is given in the engineering report (Bain, 1998). The soils are well drained, deep fine sandy and silt loams with discontinuous caliche (hard pan) layers. The topography of the land slopes in a southwesterly direction at approximately 2%.

Well logs for the general area around the still site (> ½ mile radius) shows most wells have been completed in the basalt bedrock. Well depths range from 308-440ft with static water depths of 105-180 ft. A single shallow well (63 ft) had a static water depth of 16ft. All well logs showed the presence of a caliche layer of varying thickness above the basalt bedrock.

#### PERMIT STATUS

The previous permit for this facility was reauthorized on January 24, 2001.

An application for permit renewal was submitted to the Department on December 1, 2004 and accepted by the Department on March 15, 2005.

It was discovered that the SIC codes on the current permit and permit application (0139/2899) are incorrect; 0139 is for "Field crops, except cash grains, not elsewhere classified", and 2899 is for "Chemicals and chemical preparations, not elsewhere classified. The correct SIC code should be, 2087 "Flavor extracts and flavoring syrups, not elsewhere classified" and will be put on the proposed permit.

# SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received a compliance inspection on July 25, 2003.

During the history of the previous permit, the Permittee has not complied with all of the testing and reporting requirements of the permit based on Discharge Monitoring Reports (DMRs). As shown in the tables in Addendum I, the monthly monitoring of the irrigation water has been inconsistent and only one complete sample analysis was done for the condenser waste stream.

The purpose of the testing schedule that was placed in the first permit (issued 1999) and extended into the current permit is to add to the small amount of wastewater data that was available when the engineering report was done.

#### WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in discharge monitoring reports. The proposed wastewater discharge prior to land application is characterized for the following parameters as reported in monthly discharge monitoring reports for the period February 2001 through November 2004:

Table 1: Irrigated Wastewater Characterization

<u>Parameter</u>	Concentration					
TKN (as N)	Range: $0.7 - 3.11 \text{ mg/L}$ ; Avg. = $1.29 \text{ mg/L}$					
Nitrate (as N)	Range: $0.2 - 2 \text{ mg/L}$ ; Avg. = $0.8 \text{ mg/L}$					
TDS	Range: $105 - 222 \text{ mg/L}$ ; Avg. = $146 \text{ mg/L}$					
pH	6.6 – 7.8 s.u.					
Temp.	57.9 – 76.8 °F					

#### PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard were determined in the engineering report (Engineering Report in Support of Permit Applications for B&G Farms, Inc. Mint Still Facility, Royal City, WA., 1998; and, Addendum #1 and Addendum #2, 1999), in conformance with *Guidelines for the Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, May 1993.

The permit also includes limitations on the quantity and quality of the wastewater applied to the sprayfield that have been determined to protect the quality of the ground water and viability of the crops. The approved engineering report includes specific design criteria for this facility.

# TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). The following permit limitations are necessary to satisfy the requirement for AKART:

- 1. Wastewater shall be land applied via spray irrigation not to exceed agronomic rates (as defined in the Department's ground water implementation guidance) for total nitrogen and water, and at rates for other wastewater constituents that are protective of background ground water quality.
- 2. Total nitrogen and water shall be applied to the sprayfields as determined by a current irrigation and crop plan.
- 3. The system must be operated so as to protect the existing and future beneficial uses of the ground water and not cause a violation of the ground water standards.
- 4. The temperature of the irrigated wastewater shall be  $\leq$  85 °F.
- 5. At least 175 acres of cropland will be used for wastewater treatment.
- 6. The total hydraulic loading rate for all fields shall not exceed 2 ft/ year.

This is a change from what is presented in the engineering report which recommended a hydraulic rate to 2 ft/ year for the center pivot fields, and 3 ft/ year for the rill irrigated fields. The high leaching fraction value reported for 2002 for the rill irrigated field is the reason for lowering the loading limitation on the rill field.

Appendix C shows the conversion of irrigation volume from gallons/day to feet/day. This conversion will be made part of B&G's DMR form.

# GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground waters and to protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to ground water [WAC 173-200-010(4)]. This goal is achieved by [GW Implementation Guidance, Abstract, page x]:

1. Requiring that AKART (all known available and reasonable methods of prevention, control and treatment) be applied to any discharge;

- 2. Application of the antidegradation policy of the ground water quality standards. This policy mandates protecting background water quality and preventing degradation of water quality which would harm a beneficial use or violate the ground water standards; and
- 3. Establishing numeric and narrative criteria for the protection of human health and welfare in the ground water quality standards.

Numeric ground water criteria (maximum contaminate concentrations) are based on drinking water quality criteria. Applicable criteria concentrations are listed below:

# Table 2: Ground Water Quality Criteria

Total Dissolved Solids	500 mg/L
pH	6.5 to 8.5 s.u.
Nitrate	10 mg/L

Based on information presented in the engineering report on site geology, the operational data on the quality and quantity of the irrigated mint still wastewater and the short seasonal nature of the mint still process, the discharge of process wastewater authorized by this permit is not expected to interfere with the beneficial uses of the ground water. In addition, Ecology has not required the Permittee to install a ground water monitoring system.

# MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

#### WASTEWATER MONITORING

The monitoring schedule for the irrigation, condenser, and redistill waste streams is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Samples of the irrigated wastewater will continue to be collected at Pond #3, near the irrigation pump. Samples of the condenser and redistill wastewater streams will be collected from locations within the mint still facility prior to discharge.

The sampling frequency and list of chemical parameters for each waste stream will not be changed from that in the current permit. It is believed that the monitoring requirements in the proposed permit are at the minimum level, given the quality and quantity of wastewater produced, and the short duration of the mint process season.

The sampling of the waste streams also provides additional wastewater data to meet the concerns expressed in Addendum #1 to the 1998 engineering report (B&G Farms, 1999) about the quality of the chemical data for the mint still discharge.

#### FLOW MONITORING

A site visit on March 1, 2005 revealed that the flow meter that was being read and reported for the condenser water flow from the still was, in fact, not measuring condenser flow, but instead was measuring the amount of water being pumped from Pond #3 to the still. Currently, there is no flow meter that measures the discharge of the condenser cooling water waste stream.

The permit will require the installation of some form of flow measuring device for the condenser wastewater stream from the still to Pond #1. The device shall be in place by August 1, 2005, and B&G shall report its installation in the August 2005 monthly Discharge Monitoring Report.

#### **CROP MONITORING**

Crop monitoring for specific parameters (e.g., nitrogen, ash weight, and sodium) is generally required for land treatment systems to help determine the water and nutrient balance for the sprayfield system that is required in the irrigation and crop plan report. However, based on the low nitrogen and water loading contributed by the process wastewater relative to the crop requirements, it has been decided to not require crop monitoring for specific parameters. Instead, generally accepted literature values for crop requirements in the Columbia Basin for water, nitrogen, and ash content can be used when determining the water and nutrient balances for the sprayfields.

However, the permit will require that the Permittee measure and report the total harvested crop production (yield; tons/acre) for each sprayfield that receives irrigated process wastewater.

#### SOIL MONITORING

The soil monitoring schedule in the current permit will be extended to the proposed permit. The reporting of the results shall be in the Irrigation and Crop Plan report. Values will be compared to soil test results in 2000, 2002, and 2004.

# GROUND WATER MONITORING

Ecology has not required the installation of a ground water monitoring system for the sprayfield site.

#### OTHER PERMIT CONDITIONS

#### REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

#### **FACILITY DESIGN**

The design criteria for this cooling pond treatment facility are taken from 1998 engineering report prepared by Richard Bain, consulting engineer and are as follows:

Maximum daily flow from still:

3.75 mgd

Average daily flow from still:

1.63 mgd

Minimum amount of cropland online for 175 acres wastewater treatment:

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). For significant changes in loadings to the treatment works, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

# IRRIGATION AND CROP MANAGEMENT PLANS

The submittal of an irrigation and crop management plan is required to support the engineering report. This plan shall include a consideration of wastewater application at agronomic rates and should describe and evaluate various irrigation controls.

The frequency of submittal of this plan report in the proposed permit (2/ permit cycle) will continue from the current permit.

# OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

## Rill irrigated field

As mentioned previously, irrigation and crop information submitted by B&G Farms for the 2002 processing year (Soiltest, 2003) showed a high leaching fraction (52%) for the rill irrigated field (Baird field; Fig. 5). Ecology recognizes that leaching is occasionally needed to control soil salinity in the sprayfields, but excessive leaching like that for the rill irrigated field has a high potential to impact ground water, regardless of the depth to ground water. The large leaching fraction also does not comply with the current and proposed permit's discharge limitation to operate the sprayfield system "..so as to protect the existing and future beneficial uses of the ground water...".

The amount of wastewater that will be allowed by the proposed permit to the Baird field will be reduced from 3 to 2 ft/year in an effort to reduce the leaching of wastewater and potential impacts to the ground water. The 3 ft/year loading rate was taken from the engineering report.

In addition, the permit will restrict the irrigation sets at the Baird field to 12 hours, instead of the usual 24hr sets. This will result in a less amount of water sent down the rills and allowed to soak into the ground; less leaching.

If the reduction in the permitted hydraulic loading and lower set times do not correct the excessive leaching from the Baird fields, Ecology will notify B&G Farms during the permit cycle that the conditions of the permit will be modified to remove the Baird field from accepting wastewater, and that another field(s) must be brought on-line. The amount of additional fields must bring the total available sprayfield to at least 175 acres, the minimum amount needed to treat the annual production of wastewater.

#### SOLID WASTES

The steam cooked mint residue (mint slug) is currently being composted at a separate site. According to information from Ecology's Solid Waste Program the composting is operating under an agriculture exemption and is not permitted by the local health authority.

The proposed permit contains standard language that prohibits any runoff or leachate from the composting operation into any surface water.

#### SPILL PLAN

There are 11 above ground diesel storage tanks (40,000 gallons each) located near the still facility. From a March 1, 2005 site visit, it was discovered that four tanks are routinely used for fuel storage for the boilers, four are used when fuel prices are low and extra fuel can be purchased, and three are no longer plumbed into the system. The land area that is adjacent to the tanks and topographically down gradient is slightly bowl shaped, and has a 6-10ft high earthen berm along its southern boundary next to Road 11 S.W. (Fig. 4). The berm in combination with the slightly depressed nature of the land appears to be able to contain the contents of a tank if it were to rupture. Clean up of any large spill would still be required.

The 2005 site visit also revealed that the bare dirt area around the pipe coupling and pump area where diesel fuel transported to the site is off-loaded to the storage tanks shows obvious visual signs of some historical minor diesel spills.

The Department has no record of a spill plan for the site. A call was made to the Grant Co. Fire Marshal for a spill plan; there was nothing on record.

The 1998 engineering report and Addendum #2 discuss the storage tanks and made recommendations to reduce the impacts of a potential spill. They include:

- 1. Install highway barriers or ecology blocks to protect the southern most tanks.
  - The March 1, 2005 site visit revealed that the southern most tanks are no longer used. In addition there has been a substantial reduction in truck traffic near the tank site since the engineering report was written. This reduction is because the mint slug solid waste is no longer piled near the tank site.
- 2. Double valve the tank piping.
- 3. Excavate and line a containment area equal to the volume of at least one tank in case of a rupture or leak.
- 4. Install a berm as secondary containment to contain water run-off.

The March 1, 2005 site visit showed that a berm extends along Road 11 S.W. (Fig. 4).

Based on the observations made at the fuel storage site in March 2005, the proposed permit will require B&G Farms to:

1. Remove the diesel tainted soils around the off-load area at the tank storage site, and install containment that will capture spilled fuel.

- Given that there is a small amount of tainted soil, a method of disposal could include mixing the soil with some nitrogen fertilizer or organic material (e.g., manure) and spread it out onto the ground to enhance the bacterial breakdown of the diesel fuel.
- 2. Submit to Ecology a spill plan for the diesel tanks. The spill plan shall contain the requirements for the Grant County fire marshal or the state's requirements for "Contingency plan and emergency procedures", that are part of the state's dangerous waste regulations (WAC 173-303-350) which is attached to this fact sheet.

## GROUND WATER OUALITY EVALUATION (HYDROGEOLOGIC STUDY)

A hydrogeologic study of the sprayfield site will not be required for this permit cycle. This decision will be re-evaluated at the next permit cycle. A study may be needed depending on the hydraulic and nutrient loading, soil sample results, and leaching fraction information that is presented in the irrigation and crop plan reports.

#### POND USE

In Ecology's engineering report approval letter, dated March 19, 1999, it was explained that the use of the clay lined ponds for any other type of wastewater would require, in part, the modification of the permit to require the lining of the ponds.

In the winter of 2002-03 B&G Farms made a request to Ecology to temporarily store approximately 400,000 gallons of silage leachate into the primary pond. B&G was informed that the pond could not be used until an amendment to the engineering report was submitted and approved by Ecology for its use. As per the approval letter, Ecology's approval of the amendment would have required lining of the pond. An amended engineering report was not submitted.

To reinforce Ecology's conditional use of the clay lined ponds, Section S5 (Operations and Maintenance) of the proposed permit will restrict the use of all earthen ponds at the site for mint still process wastewater only. The use of the ponds for any other type of wastewater will, in part, require the submittal of a professional engineer's stamped amendment to the engineering report that describes the proposed alternative use. Ecology will most likely require the lining of all or a portion of the pond prior to its use for any other type of wastewater.

#### GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or

regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

# RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for five years.

# REFERENCES FOR TEXT AND APPENDICES

Bain, Richard C., Consulting Engineer. 1998. Engineering Report in Support of Permit Applications for B&G Farms, Inc. Mint Still Facility, Royal City, Wa. April

B&G Farms, Inc. 1999. <u>Addendum #1 and #2, Engineering Report for B&G Farms, Inc. Mint Still Facility</u>. March.

Soiltest Farm Consultants. 2003. <u>B&G Farms, Inc., Land Application Report – 2002 & Crop Management Plan</u>. September.

Washington State Department of Ecology, 1993. <u>Guidelines for Preparation of Engineering</u>
<u>Reports for Industrial Wastewater Land Application Systems</u>, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology.

Laws and Regulations( http://www.ecy.wa.gov/laws-rules/index.html )

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html

Washington State Department of Ecology, 1996. <u>Implementation Guidance for the Ground Water Quality Standards</u>, Ecology Publication # 96-02.

#### APPENDICES

# APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this Fact Sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on March 23<sup>rd</sup> and March 30<sup>th</sup> in the South County Sun to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on May 25, 2005 in the South County Sun to inform the public that a draft permit and fact sheet is available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator Department of Ecology 4601 North Monroe Street Spokane, WA 99205-1295

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509.329.3537, or by writing to the address listed above.

The Fact Sheet and permit were written by Don Nichols.

#### APPENDIX B--GLOSSARY

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**Bypass**--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Engineering Report**--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Soil Scientist—An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

**State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

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**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

FACT SHEET FOR STATE WASTE DISCHARGE **PERMIT ST-8060**B&G Farms – Mint Still

**Total Dissolved Solids**--That portion of total solids in water or wastewater that passes through a specific filter.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

# APPENDIX C—CALCULATIONS

Conversion of the daily irrigation wastewater flow to the fields (gallons) to hydraulic load (feet):

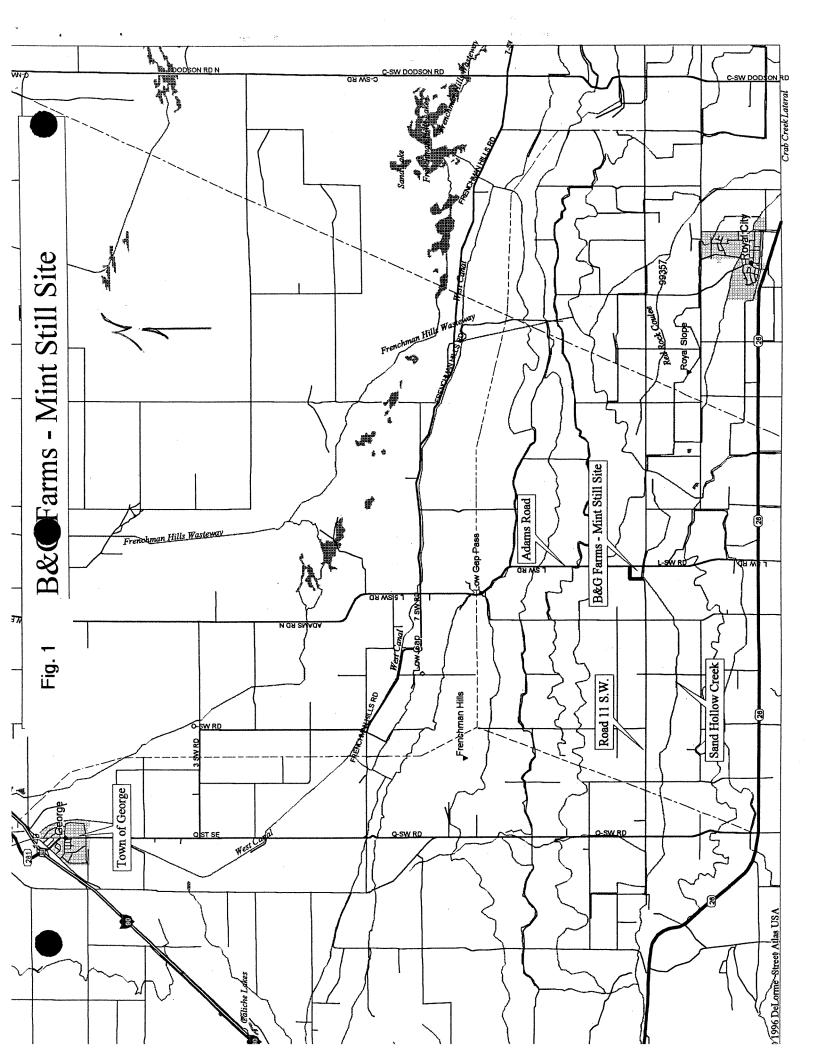
$$(gallons) \times \left(\frac{1 ft^3}{7.5 \ gallons}\right) \times \left(\frac{1}{sprayfield \ area \left[ft^2\right]}\right) \equiv feet$$

# Sprayfield Area:

20A = 33.2 acres;  $1.446 \times 10^6 \text{ ft}^2$  20B = 35 acres;  $1.525 \times 10^6 \text{ ft}^2$ Baird field = 115 acres;  $5.009 \times 10^6 \text{ ft}^2$  FACT SHEET FOR STATE WASTE DISCHARGE **PERMIT ST-8060**B&G Farms – Mint Still

APPENDIX D--RESPONSE TO COMMENTS

No comments were received during the public comment period that ended June 27, 2005.



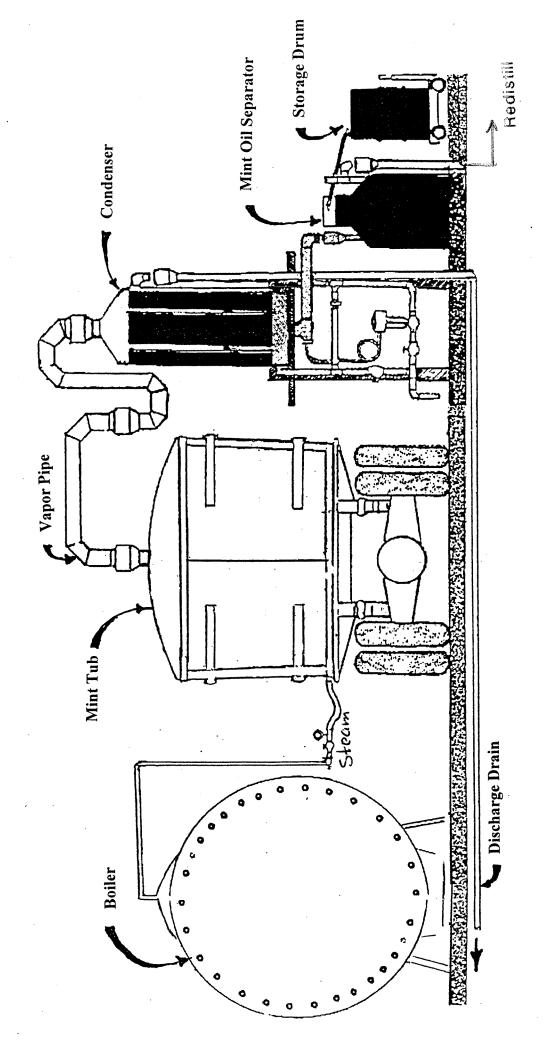


Figure 2 Typical Mint Distillation Process

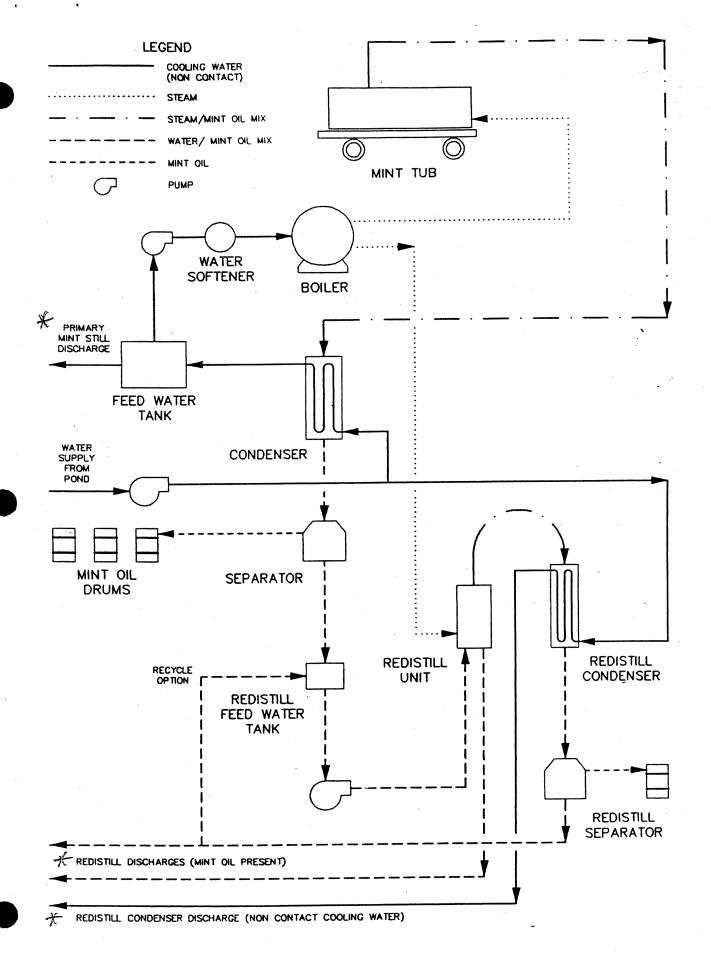
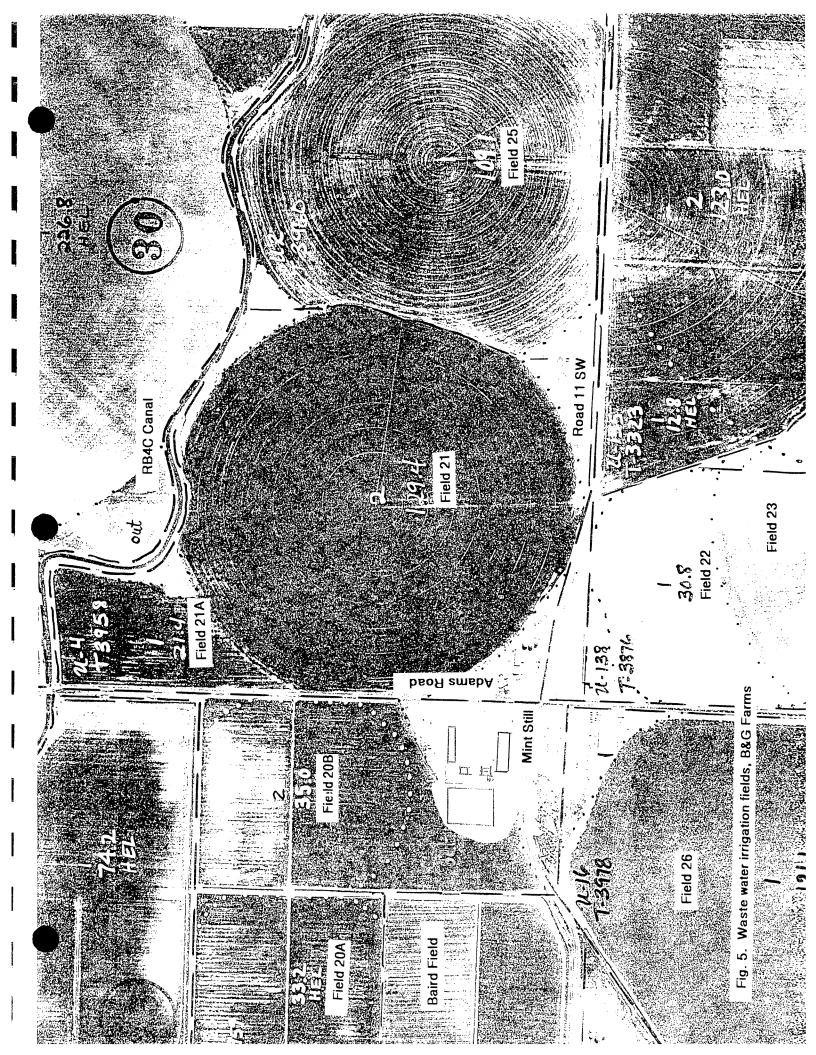


Figure 3 MINT STILL PROCESS SCHEMATIC



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# Table 1

# B&G Farms

	Condensor Avg mgd	flow Max mgd	Irrigatio Avg mgd	n flow Max mgd
Feb-01 Mar-01 Apr-01 May-01	0000	0000	C C	C C C C
Jun-01 Jul-01 Aug-01 Sep-01 Oct-01 Nov-01 Dec-01 Jan-02 Feb-02 Mar-02 Apr-02 Jun-02	C 0.529 0.913 0.788 0.866 C C C C C	C 0.578 1.65 1.91 1.674 C C C C C	0.659 1.213 E C C C C C C C	0.736 1.622 E C C C C C C C
Jul-02 Aug-02 Sep-02 Oct-02 Nov-02 Dec-02 Jan-03 Feb-03 Mar-03 Apr-03 Jun-03 Jul-03	0.053 0.051 0.109 0.061 C C C C C C C	0.182 0.055 0.464 0.135 C C C C C C	0.071 0.054 0.311 0.042 C C C C C C	0.16 0.078 0.152 0.054 C C C C C C C
Aug-03 Sep-03 Oct-03 Nov-03 Dec-03 Jan-04 Feb-04 Mar-04 Apr-04 Jun-04	0.024 0.081 0.071 C C C C C C	0.041 0.181 0.213 C C C C C C	0.113 0.072 0.09 C C C C C C	0.275
Jul-04 Aug-04 Sep-04 Oct-04 Nov-04	0.094 0.095 0.096 0.098 C	0.095 0.095 0.097 0.098 C	0.072 0.789 0.792 0.804	0.789 0.795 0.804 C
Average	0.253	0.479	0.391	0.464

C = No Discharge E = Analysis Not Done

TABLE 2

# **B&G Farms - irrigation water**

#### **B&G Farms - condenser water**

						Te	mp					
	TKN mg/L	NO3 mg/L	pl max	H min	TDS mg/L	min ° F	max ° F			TDS mg/L	TKN mg/L	NO3 mg/L
Feb-01	9-=							•	Feb-01			
Mar-01									Mar-01			
Apr-01									Apr-01			
May-01									May-01			
Jun-01									Jun-01			
Jul-01	1.34	2	7.1	7.1	161.3	72.4	72.6		Jul-01			
Aug-01	1.07	-	7.3	7.3		71.1	73.2		Aug-01			
Sep-01			7.3	7.1		72.4	76.8		Sep-01			
Oct-01			7.3	7.3		70.6	72.4		Oct-01			
Nov-01			7.5	7.0					Nov-01			
Dec-01									Dec-01			
Jan-02									Jan-02			
									Feb-02			
Feb-02									Mar-02			
Mar-02									Apr-02			
Apr-02									May-02			
May-02									Jun-02			
Jun-02	2 44	0.015	7.8	7.8	222	74.4	76.3		Jul-02			
Jul-02	3.11	0.015	7.6 7.5	7.3	#.#.Z	72.2	74.3		Aug-02			
Aug-02			7.5 7.6	7.3 7.2		64.6	67.3		Sep-02			
Sep-02	0.7		7.6 7.6	7.2 7.2	160	57.9	60.3		Oct-02			
Oct-02	0.7		7.0	1.2	100	37.5	00.5		Nov-02			
Nov-02									Dec-02			
Dec-02									Jan-03			
Jan-03									Feb-03			
Feb-03									Mar-03			
Mar-03									Apr-03			
Apr-03									May-03			
May-03									Jun-03			
Jun-03	0.70		7.0	<b>~</b> 0	216	71	74		Jul-03			
Jul-03	0.72		7.2	6.8		70	72		Aug-03			
Aug-03	1.32		7.6	7.4	124	66.1	74		Sep-03	98	0.88	0.044
Sep-03	0.84		7.2	6.6	112	60.3	62		Oct-03	90	0.00	0.044
Oct-03	1		6.8	6.8	114	60.3	02		Nov-03			
Nov-03									Dec-03			
Dec-03									Jan-04			
Jan-04									Feb-04			
Feb-04												
Mar-04									Mar-04			
Apr-04									Apr-04			
May-04									May-04			
Jun-04							70		Jun-04			
Jul-04						69.3	70		Jul-04			
Aug-04	1.28	0.5	7.8	7.8	126	67	67		Aug-04			
Sep-04			7.8	7.5	120	67.4	69		Sep-04			
Oct-04			7.5	7.2	105	67	69		Oct-04	116		
Nov-04									Nov-04			
Average	1.29	0.84			146	68	71					•

# **B&G Farms - Redistill water**

	• •	TKN (as N)	TDS
	mg/L	mg/L	mg/L
1-Sep-01			
1-Oct-02	11.1	13.5	40
1-Sep-03	24.73	31.4	20.3
1-Oct-04	26	30	174

State of Washington Dangerous Waste Regulation

Contingency plan and emergency response procedures (WAC 173-303-350)

have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required in subsection (1) of this section;

- (b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone or a hand-held, two-way radio, capable of summoning external emergency assistance, unless such a device is not required in subsection (1) of this section.
- (3) Aisle space. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the department that aisle space is not needed for any of these purposes.
- (4) Arrangements with local authorities. The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations, unless the hazards posed by wastes handled at the facility would not require these arrangements:
- (a) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of dangerous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;
- (b) Arrangements to familiarize local hospitals with the properties of dangerous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility;
- (c) Agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and
- (d) Where more than one party might respond to an emergency, agreements designating primary emergency authority and agreements with any others to provide support to the primary emergency authority.
- (5) Where state or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

[Statutory Authority: Chapters 70.105 and 70.105D RCW. 95-22-008 (Order 94-30), § 173-303-340, filed 10/19/95, effective 11/19/95. Statutory Authority: Chapter 70.105 RCW. 84-09-088 (Order DE 83-36), § 173-303-340, filed 4/18/84. Statutory Authority: Chapter 70.105 RCW and RCW 70.95.260. 82-05-023 (Order DE 81-33), § 173-303-340, filed 2/10/82.]

WAC 173-303-350 Contingency plan and emergency procedures. (1) Purpose. The purpose of this section and WAC 173-303-360 is to lessen the potential impact on the public health and the environment in the event of an emergency circumstance, including a fire, explosion, or unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, surface water, or ground water by a facility. A contingency plan must be developed to lessen the potential impacts of such emergency circumstances, and the plan must be implemented immediately in such emergency circumstances.

(2) Contingency plan. Each owner or operator must have a contingency plan at his facility for use in emergencies or

sudden or nonsudden releases which threaten human health and the environment. If the owner or operator has already prepared a spill prevention control and countermeasures (SPCC) plan in accordance with Part 112 of Title 40 CFR or Part 1510 of chapter V, or some other emergency or contingency plan, he need only amend that plan to incorporate dangerous waste management provisions that are sufficient to comply with the requirements of this section and WAC 173-303-360.

- (3) The contingency plan must contain the following:
- (a) A description of the actions which facility personnel must take to comply with this section and WAC 173-303-360.
- (b) A description of the actions which will be taken in the event that a dangerous waste shipment, which is damaged or otherwise presents a hazard to the public health and the environment, arrives at the facility, and is not acceptable to the owner or operator, but cannot be transported, pursuant to the requirements of WAC 173-303-370(5), Manifest system, reasons for not accepting dangerous waste shipments;
- (c) A description of the arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services as required in WAC 173-303-340(4);
- (d) A current list of names, addresses, and phone numbers (office and home) of all persons qualified to act as the emergency coordinator required under WAC 173-303-360(1). Where more than one person is listed, one must be named as primary emergency coordinator, and others must be listed in the order in which they will assume responsibility as alternates. For new facilities only, this list may be provided to the department at the time of facility certification (as required by WAC-173-303-810 (14)(a)(i)); rather than as part of the permit application;
- (e) A list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities; and
- (f) An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe the signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes.
- (4) Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:
  - (a) Maintained at the facility; and
- (b) Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.
- (5) Amendments. The owner or operator must review and immediately amend the contingency plan, if necessary, whenever:
- (a) Applicable regulations or the facility permit are revised;
  - (b) The plan fails in an emergency;
- (c) The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or

[Ch. 173-303 WAC-p. 69]

(11/30/04)

releases of dangerous waste or dangerous waste constituents, or in a way that changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

[Statutory Authority: Chapters 70.105 and 70.105D RCW. 98-03-018 (Order 97-03), § 173-303-350, filed 1/12/98, effective 2/12/98; 95-22-008 (Order 94-30), § 173-303-350, filed 10/19/95, effective 11/19/95; 94-01-060 (Order 92-33), § 173-303-350, filed 12/8/93, effective 1/8/94. Statutory Authority: Chapter 70.105 RCW. 84-09-088 (Order DE 83-36), § 173-303-350, filed 4/18/84. Statutory Authority: Chapter 70.105 RCW and RCW 70.95.260. 82-05-023 (Order DE 81-33), § 173-303-350, filed 2/10/82. Formerly chapter 173-302 WAC.]

WAC 173-303-355 Superfund Amendments and Reauthorization Act Title III coordination. (1) Owners or operators must coordinate preparedness and prevention planning and contingency planning efforts, conducted under WAC 173-303-340 and 173-303-350, with local emergency planning committees established pursuant to Title III of the 1986 Superfund Amendments and Reauthorization Act.

(2) Appropriate and generally accepted computer models should be utilized to determine the impacts of a potential catastrophic air release due to first explosion, or other accidental releases of hazardous constituents. Evacuation plans prepared pursuant to WAC 173-303-350 (3)(d) must include those effected persons and areas identified through these modelling efforts.

[Statutory Anthority: Chapters 70.105 and 70.105D RCW-95-22-008 (Order 94.50), § 173-303-355, filed 10/19/95, effective 11/19/95. Statutory Authority: RCW 43.21A.080 and 70.105.210, et seq. 90-20-016, § 173-303-355, filed 9/21/90, effective 10/22/90.]

WAC 173-303-360 Emergencies. (1) Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, required by WAC 173-303-350(2), all operations and activities at the facility, the location and properties of all wastes handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(2) Emergency procedures. The following procedures must be implemented in the event of an emergency.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

(i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(ii) Notify appropriate state or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials.

(c) Concurrently, the emergency coordinator must assess possible hazards to human health and the environment (con-

sidering direct, indirect, immediate, and long-term effects) that may result from the release, fire, or explosion.

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment, he must report his findings as follows:

(i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(ii) He must immediately notify the department and either the government official designated as the on-scene coordinator, or the National Response Center (using their 24-hour toll free number (800) 424-8802).

(e) His assessment report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, ix any; and

(vi) The possible hazards to human health or the environment outside the facility.

- (f) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.
- (g) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
- (h) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(i) The emergency coordinator must ensure that, in the affected area(s) of the facility:

(i) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(j) The owner or operator must notify the department, and appropriate local authorities, that the facility is in compliance with (i) of this subsection before operations are resumed in the affected area(s) of the facility.

(k) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, he must submit a written report on the incident to the department. The report must include:

(i) Name, address, and telephone number of the owner or operator;

(ii) Name, address, and telephone number of the facility;